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September 30, 2003

**VIA ELECTRONIC FILING**

Marlene Dortch  
Secretary  
Federal Communications Commission  
The Portals  
TW-A325  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

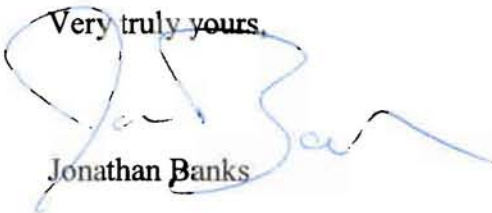
Re: Ex Parte, WC Docket No. 01-338

Dear Ms. Dortch:

On September 29, 2003, Jon Banks, Herschel Abbott, Peter Hill and Kathy Levits met with Commissioner Martin and Dan Gonzales. Our discussion followed the attached document concerning fiber loops.

Please feel free to contact me if you have any questions or comments.

Very truly yours,

  
Jonathan Banks

JB:kjw  
Attachment

# Fiber Loops

**Peter Hill**

**September 29, 2003**

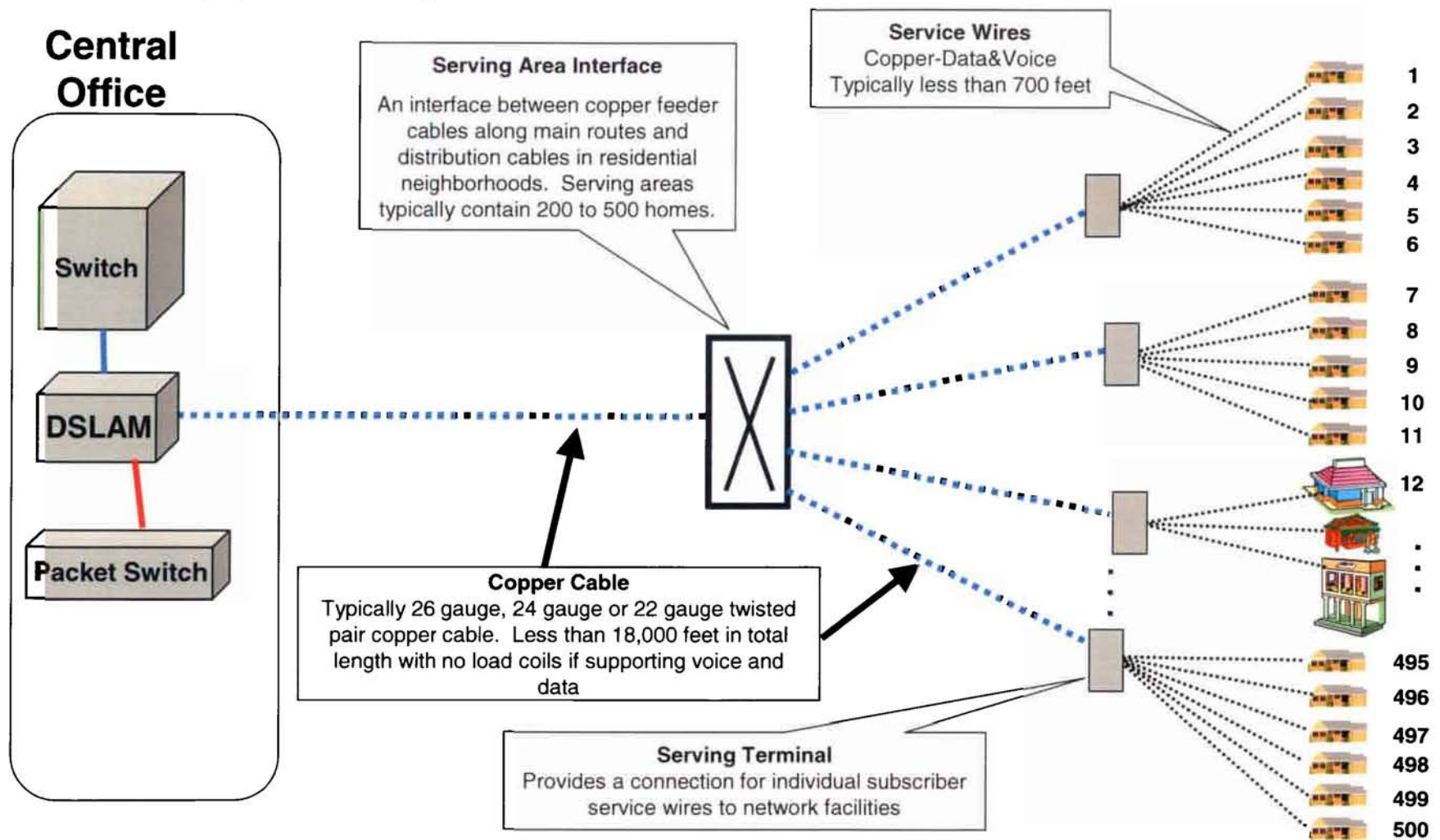
## **Outline**

- **BellSouth Fiber Background**
- **Architectural Background**
  - + All Copper Loops
  - + Fiber Fed Digital Loop Carrier (DLC)
  - + Fiber to the Curb
  - + Fiber to the Home
  - + Fiber to the Multiple Dwelling Unit (MDU)
- **Service Capabilities**
- **Challenges with the FCC Order**
- **Proposed Definition**

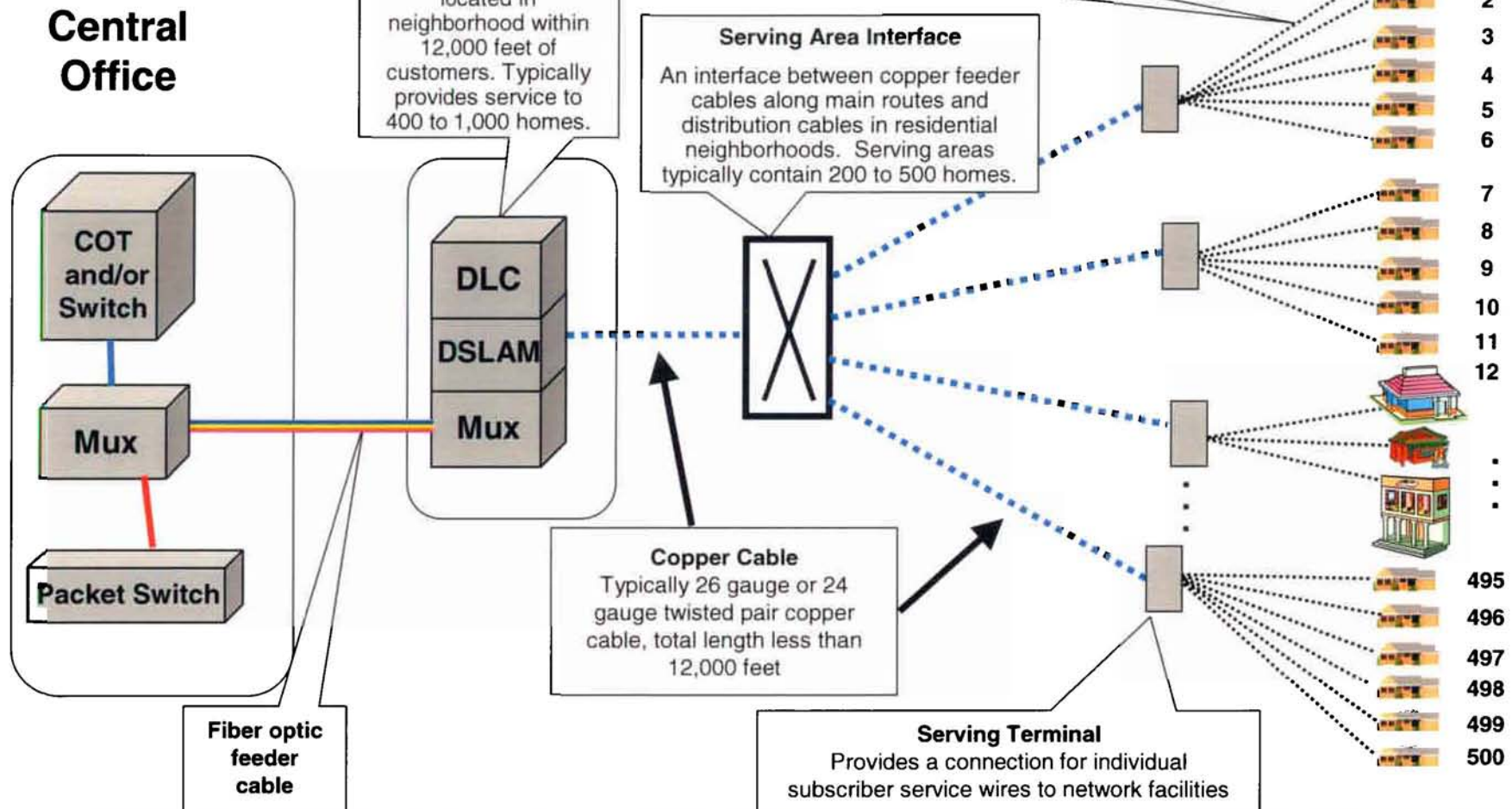
## BellSouth Fiber Background

- **Deployed first Fiber to the Home (FTTH) Network in 1986**
  - + Hunters Creek Florida
- **Began Deploying Fiber Distribution in 1995**
  - + By End of Year, 1 Million Homes will be Served By Fiber
  - + Voice, Data, and Video Capable Architecture
- **Fiber used for all New Feeder Placements beginning in 1996**
- **High Level of Fiber in Feeder and Distribution**
  - + 50% of our Loops could support 5 Mbps
  - + 80% could support 3 Mbps
- **Deployed the first US Passive Optical Network (PON) FTTH System**
  - + Atlanta 1999

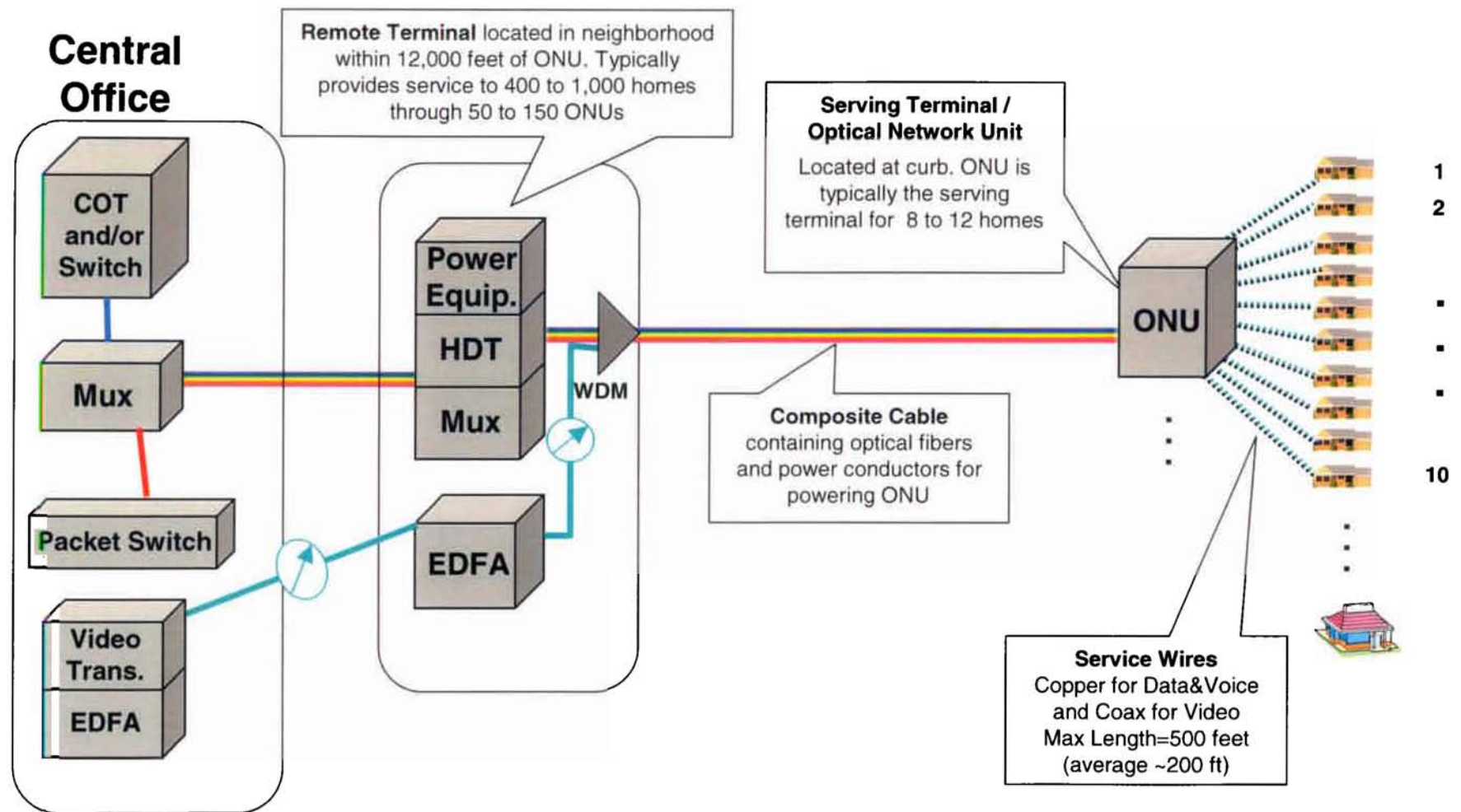
# All-Copper Loop Reference Architecture



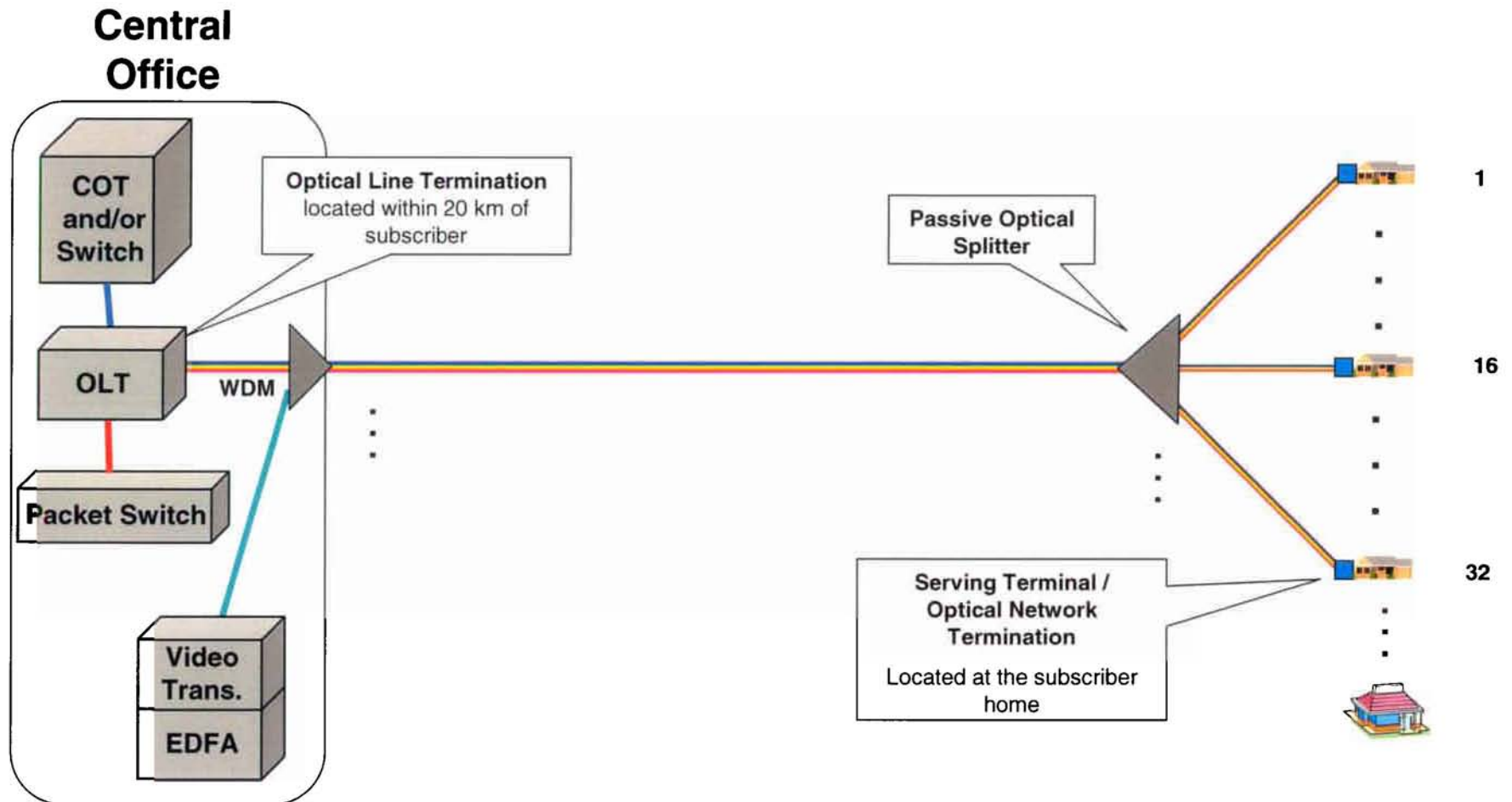
# Fiber Fed Digital Loop Carrier "Hybrid Loop" Reference Architecture



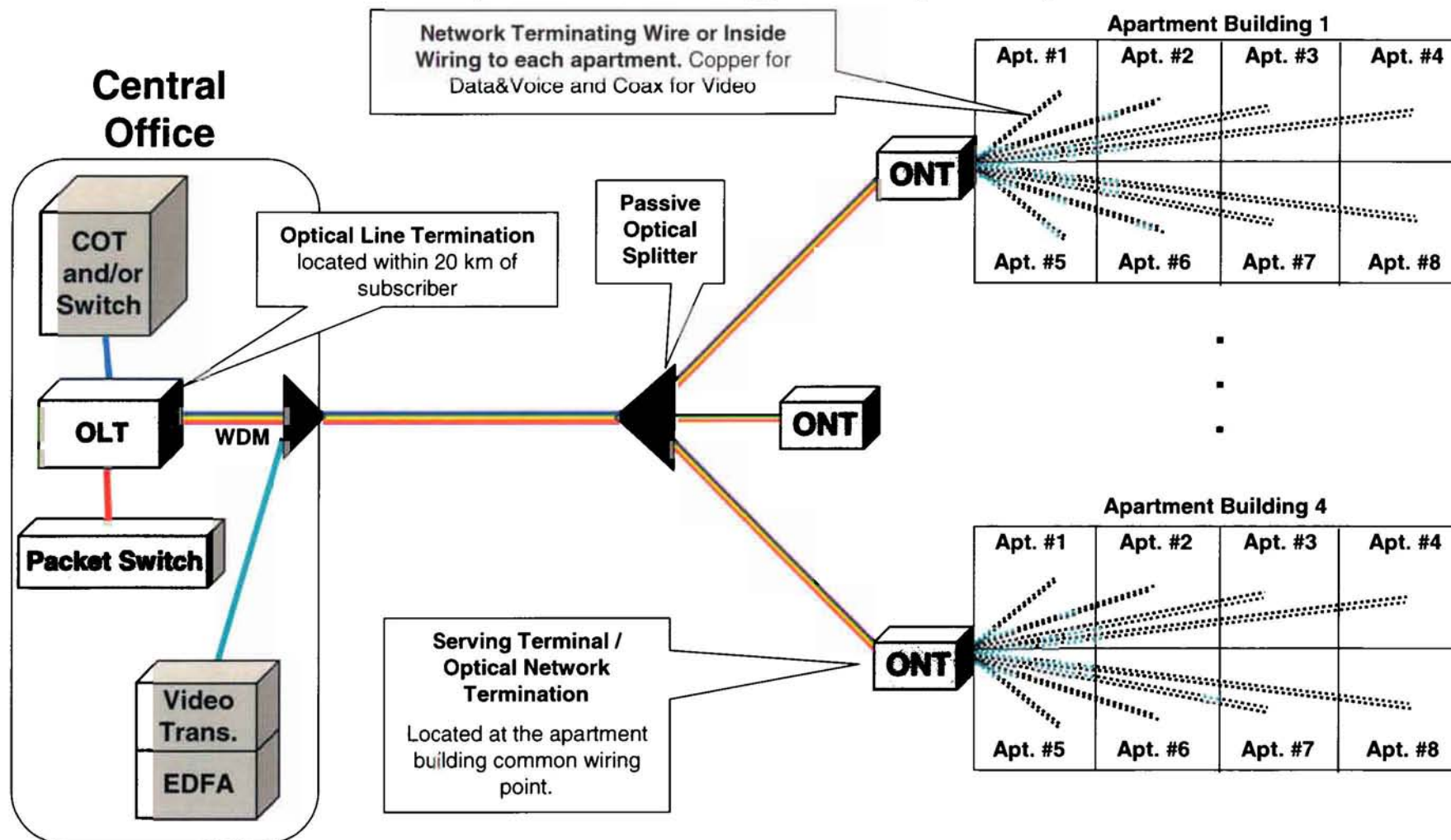
## Fiber to the Curb (FTTC) Reference Architecture



## Fiber to the Home (FTTH) Reference Architecture

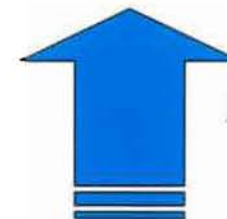


## Fiber to the Multiple Dwelling Unit (MDU)



## **Service Capabilities**

	Voice	Data	Video
Fiber to the Curb	Yes	> 100Mbps	Yes
Fiber to the Home	Yes	> 100Mbps	Yes
Fiber to the Multiple Dwelling Unit (MDU)	Yes	> 100Mbps	Yes



*Massive  
Jump*

Fiber Fed Digital Loop Carrier "Hybrid Loop"	Yes	~5Mbps for 12kft	No
All-Copper Loops	Yes	~256Kbps for 18kft	No

## Challenges with Fiber Loops Portion of FCC Order

- **Service Equivalent Architectures (FTTH and FTTC) not Treated Equally**
  - + Architecture Picking by FCC
  - + Inconsistent with paragraph 50 of Triennial NPRM where FCC recognized FTTH/FTTC equivalence
  - + FTTC is MASSIVELY more Broadband Capable than Fiber Fed DLC
  - + Architecture needs to be selected based upon the most economical serving arrangement which may not always extend fiber all the way to the customer's "home."
- **Equal Treatment for "Homes" other than Single Family Suburbia**
  - + Apartments, Condominiums, Town homes, Etc.
- **Lacks Incentive to Quickly Increase Deep Fiber Greenfield Investment**
  - + FTTC Available today
    - ~315K New Homes will be built in BellSouth Territory this Year
    - We will serve ~135K of them with FTTC
  - + New Neighborhoods wired with Copper tomorrow will be Doomed to Low Speed Broadband and no Video for ~25-30 Years (even as Japan moves from 10M to 100M Broadband)
  - + Opportunity missed to get significantly more Broadband Out There

## **Proposed Definition to Improve Fiber Loops Portion of Order**

- *Fiber Loop:* A fiber loop is a broadband transmission facility with capacity to deliver voice, multi-channel video, and data services to mass market customers consisting of a fiber optic cable connection and/or transmission path, whether lit or dark, between a distribution frame (or its equivalent) in the central office and the loop demarcation point and/or fiber serving terminal<sup>1</sup> supporting a service drop length of no more than 500 feet\*.

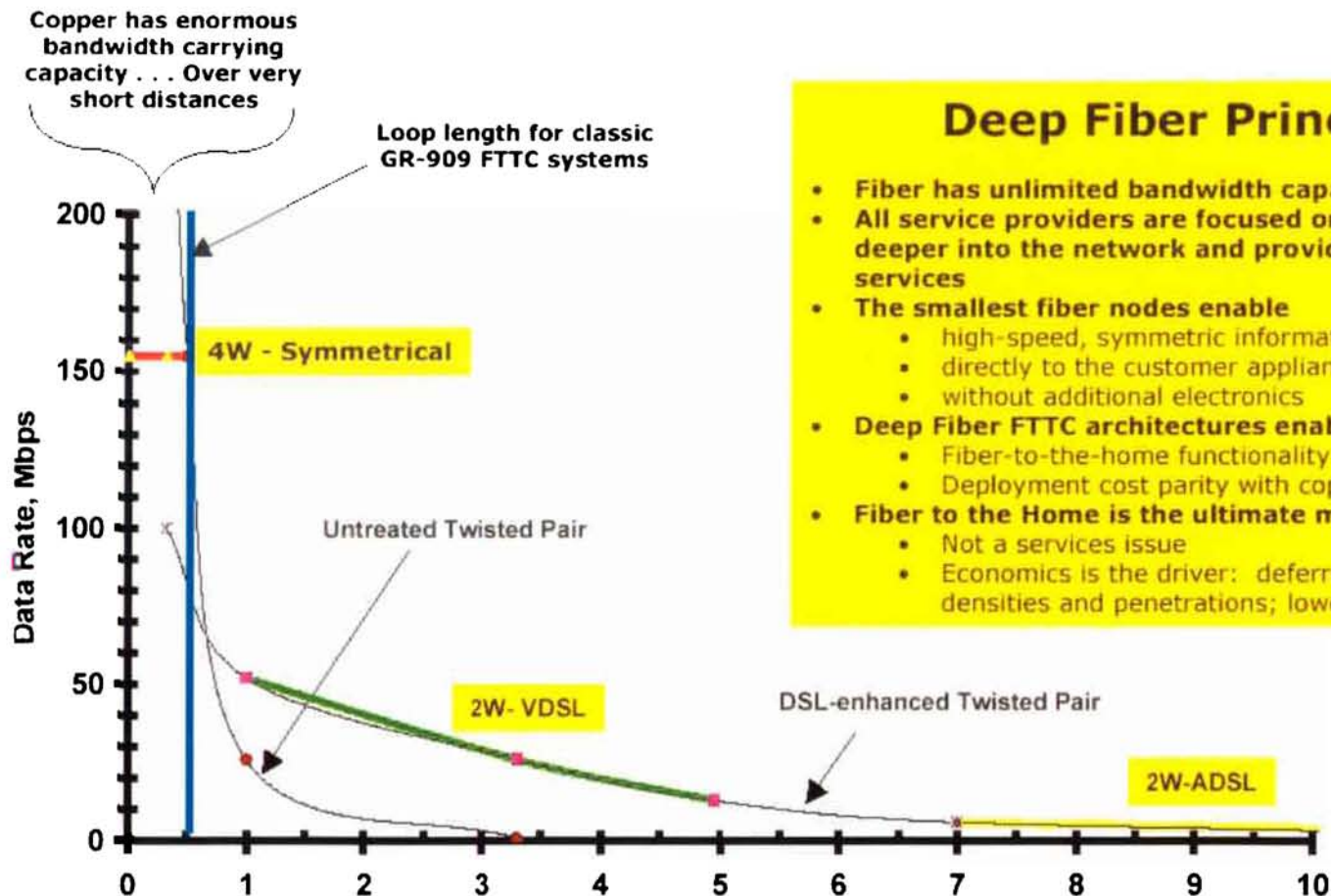
1) *Serving Terminal:* The network equipment that provides a point to connect service wires for individual customers to the shared network facilities providing their service.

\* Source: Telcordia, GR-909-CORE Issue 1, March 2000, Section 2.20

## Backup Slides

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## Value of Deep Fiber



### Deep Fiber Principles

- Fiber has unlimited bandwidth capacity
- All service providers are focused on migrating fiber deeper into the network and providing bundled services
- The smallest fiber nodes enable
  - high-speed, symmetric information delivery
  - directly to the customer appliance
  - without additional electronics
- Deep Fiber FTTC architectures enable:
  - Fiber-to-the-home functionality
  - Deployment cost parity with copper
- Fiber to the Home is the ultimate migration
  - Not a services issue
  - Economics is the driver: deferred capex for lower densities and penetrations; lower OPEX0

## Loop Demarcation Point

*Loop Demarcation Point:* That point at which operational control or ownership of communications facilities changes from one organizational entity to another. Note: The demarcation point is usually the interface point between customer-premises equipment and external network service provider equipment.